

REMARKS/ARGUMENTS

Favorable reconsideration of this Application, as presently amended and in light of the following discussion, is respectfully requested.

This Amendment is in response to the Office Action mailed on October 20, 2004. Claims 1 and 3-19 are pending in the Application; Claims 1-11 and 15 stand rejected; and Claims 12-14 stand objected to as being dependent upon rejected base claims, but would be allowed if rewritten in independent form. The indication of allowable subject matter is noted with appreciation. Claims 1, 9, and 10 are amended, Claim 2 is cancelled without prejudice or disclaimer, and new Claims 16-19 are added by the present Amendment.

In view of the allowable subject matter of Claim 12, new Claim 16 is submitted reciting the subject matter of Claim 12 in independent form, including all features originally recited in Claim 1. New Claims 17-19, depending from new Claim 16, recite subject matter originally included in Claims 13-15. Thus, Applicants respectfully submit that there are no issues of new matter with the newly submitted claims; and new Claims 16-19 are believed to be in condition for allowance.

Applicants thank Examiner Ngoclan Mai for the courtesy of an interview extended to Applicants' representative on November 8, 2004. During the interview, amendments to the claims were proposed, and arguments were presented. No agreement was reached during the interview. As summarized on the interview summary (form PTOL-413), during the interview, Examiner Mai and Applicants' representative "discuss[ed] the relevancy of the prior art and the claims. No decision or agreement has been reached."

The specification has been amended to correct heading informalities. Entry of the amendments into the record is respectfully requested.

Summarizing the outstanding Office Action, Claims 1, 3, 9, 10, and 15 were rejected under 35 U.S.C. §102(b) as being anticipated by EP 486319 A, hereinafter EP '319. Claims

1, 3-5, 9, 11, and 15 were rejected under 35 U.S.C. §102(b) as being anticipated by EP 1010861 A2, hereinafter EP '861. Claims 1, 3, 6-9, and 15 were rejected under 35 U.S.C. §102(b) as being anticipated by Mosser (U.S. Patent No. 4,606,967, hereinafter "Mosser"). Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over EP '319.

As noted in Applicants' specification, conventional powder materials for forming abradable seals based on silicon possess abradability and erosion characteristics that are satisfactory, but their suitability for use at high temperatures is limited. Above a certain low temperature, the metal matrix of the material shrinks and densifies, which can lead to blade tip wear. As for materials based on chromium and nickel, they are relatively stable and good at withstanding high temperatures; however, their abradability and erosion characteristics are less satisfactory, particularly when they are deposited facing compressor blades made of non-coated titanium alloy.¹

The powder material of the present invention can be used to, for example, provide seals presenting, among others, at least the following advantageous characteristics: (1) acceptable blade tip wear; (2) reduced heating of the blades when the blades contact the seal; (3) good resistance to erosion caused by the flow of gas traveling in the flow section of a compressor; (4) conserved abradability in an environment that is oxidizing and corrosive; (5) wear residues that reduce obstruction to the orifices for cooling the compressors; and (6) good resistance to high temperatures with reduced unwanted hardening, brittleness, and crumbling, among others.²

Claim 1 is amended to recite a powder material comprising, among other features, a metal powder containing manganese or calcium at 5% to 20% by weight, and one or more additional metal elements with individual quantities of less than 5% by weight of the metal powder. The subject matter added to Claim 1 finds non-limiting support in the subject matter

¹ See, for example, Specification, page 3, lines 6-33.

² Id., page 2, line 15 – page 3, line 5.

originally recited in Claim 2, which is now canceled, and on page 5, lines 33-37 of Applicants' specification. Thus, as to the obviousness rejection of Claim 2 in view of EP '319, that rejection is now moot. However, in order to expedite prosecution, Applicants will comment in the application of EP '319 to Claim 1 as amended.

Applicants respectfully submit that EP '319 would not support a *prima facie* case of obviousness of the invention recited in Claim 1 because the nonanalogous art of EP '319 does not teach or suggest all the claimed features.

The EP '319 document discloses an aluminum alloy powder suited particularly as a pigment to coat materials to provide the same with a decorative coating that has good weather ability and good corrosion resistance. As to the aluminum alloy disclosed in the document, the same is comprised of 83 to 91% of Al, 0.5 to 5% of Ca and from 8 to 12% of Ni. This alloy is combined with a resin such as an acrylic resin to prepare a formulation that is applied to a suitable substrate to prepare the desired decorative coating.

In the present invention, on the other hand, the powder material, which can be subjected, for example, to the harsh flow conditions in a gas turbine, contains manganese or calcium at 5% to 20% by weight, and one or more additional metal elements with individual quantities of less than 5% by weight of the metal power. Thus, not only is the range of Ca disclosed in the EP '319 different from what is claimed, EP '319 does not disclose one or more additional metal elements at the recited quantities. Applicants note that the disclosed concentration of Ni in EP '319 is from 8 to 12%; therefore, Ni could not be considered to be the recited additional elements.

Moreover, there is no motivation for a person of ordinary skill in the art to rely on EP '319 in order to arrive at Applicants' invention because it is nonanalogous art to that of the

Applicant's invention. As noted by the Court of Appeals for the Federal Circuit,³ the test for nonanalogous art is two-pronged. First, the cited reference must be of a different field of endeavor than that of the Applicant's invention. Second, the cited reference must not be directed to the same problem as the Applicant's invention. Both prongs are met here.

EP '319 is of a different field, i.e., that of pigments for design coating materials, than that of Applicants' invention, which is related to abradable material, used for example for coating blades in a gas turbine. EP '319 is not directed to the same problem as the one being resolved by Applicants' invention. EP '319 is directed to an aluminum alloy suited as a pigment to coat materials with a decorative coating, while Applicants' invention is directed to providing an improved abradable material. Thus, EP '319 is not reasonably pertinent to Applicants' field of invention because of the matter with which it deals, which logically would not have commended itself to one skilled in the art considering the problem solved by the instant invention.

In resolving the level of ordinary skill in the art, one "must ascertain what would have been obvious to one of ordinary skill in the art at the time the invention was made, and not to [the PTO Office,] the inventor, a judge, a layman, those skilled in remote arts, or to geniuses in the art at hand."⁴ In addition, EP '319 should be disqualified as a reference because the record is devoid of any showing, let alone a substantial showing, that a person of ordinary skill, seeking to solve a problem in one art, would reasonably be expected or motivated to look for a solution in an inapplicable art.⁵

³ *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); and *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

⁴ *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984).

⁵ See also *Oetiker*, *supra*, disqualifying a reference that was not within the field of an applicant's endeavor and was not reasonably pertinent to the particular problem with which the inventor was concerned because it had not been shown that a person of ordinary skill, seeking to solve a problem in one art, would reasonably be expected or motivated to look for a solution in an inapplicable art.

Therefore, for at least the above-noted reasons, Applicants respectfully submit that EP '319, which was originally applied to Claim 2, would not make obvious the invention recited in Claim 1.

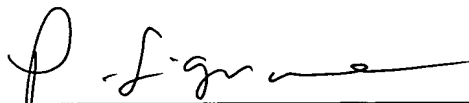
As to the above-summarized anticipation rejections of Claims 1, 3-5, 9, 11, and 15 based on EP '861 and Claims 1, 3, 6-9, and 15 in view of Mosser, those rejections are now moot in view of the fact that none of the cited references anticipated or made obvious at least the subject matter originally recited in Claim 2. Their withdrawal is respectfully requested.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1 and 3-19 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representatives at the below listed telephone number.

Respectfully submitted,

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